DETAILED ACTION

Response to Amendment

Claims **1- 13 and 20** stand **rejected**.

Claims **14- 19** are **cancelled.**

Claim **20** is newly **added** claim.

Claims **1, 3, and 7** are **amended.**

In view of the amendment, filed on 12/21/2009, following **rejections** are **withdrawn** from the previous office action.

- Rejection of claims 1- 13 under 35 U.S.C. 112, second paragraph
- Rejection of claims 1- 9 and 11- 13 under 35 U.S.C 103(a) as being unpatentable over McDonal (US 3,433,292) in view of Kumazaki (JP 57-115330)

In view of the amendment, filed on 12/21/2009, following **rejections** are **maintained** for the reason of record, as given in the previous office action. The bases of theses rejection are the same as given in the office action mailed on 08/20/2009.

Claim Rejections - 35 USC § 103

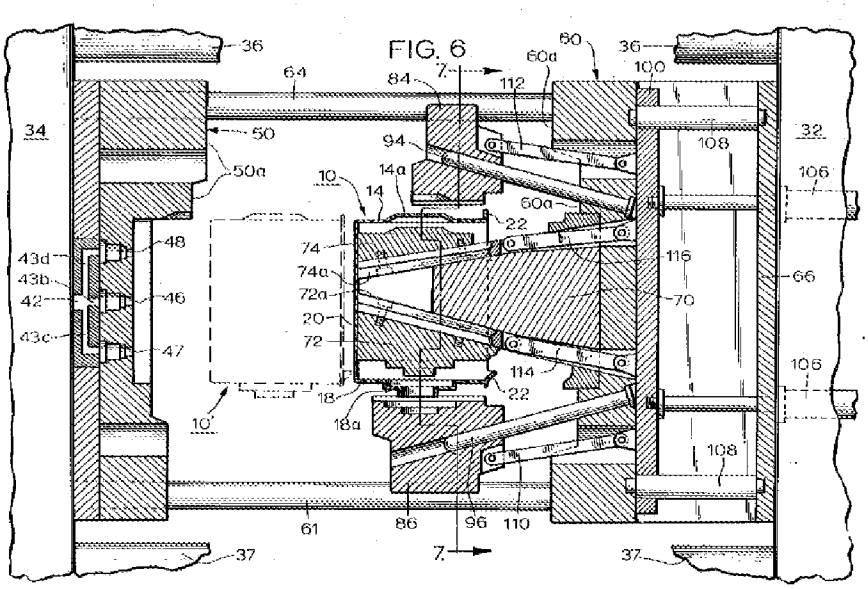
The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior office action.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1- 6 and 10- 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lovejoy et al (US 3,905,740) in view of Kumazaki (JP 57-115330)

Lovejoy et al ('740) teach an injection mold for making a polygonal plastic article having a closed bottom and an open top comprising a first mold section (50) as a first mold part fixedly secured to the stationary platen (34) and having a mold defining surface corresponding to the exterior dimensions of typical molded plastic article made, and a second mold section (60) as a second mold part which is fixedly secured to the movable platen (32) and is disposed in opposed facing relation to the first mold section (50). (See lines 31-36, column 3 and lines 61-67, column 3 and figure 6)



Furthermore, the prior art teaches the mold (30) includes a sidewall mold means comprising four separable sidewall members (80, 82, 84, and 86). The sidewall members (80, 82, 84, and 86) are interposed between the first and second mold sections (50 and 60) and in the closed position of the mold (30) correspond with the first mold section (50) to define the exterior sidewall contour of the molded article (10). (See lines 36-51, column 4) Furthermore, the sidewall members are each supported and guided by respective pairs of guide rods (90, 92, 94, and 96) of a guide means structure in which each pair of guide rods are provided for each of the side wall members. (See lines 63-68, column 4 and lines 1-5, column 5)

Moreover, Lovejoy et al ('740) teach the four sidewall members (80, 82, 84 and 86) are each formed as rectangular blocks and inter-fit in an overlapping relation. The sidewall elements in their closed position, collectively define the

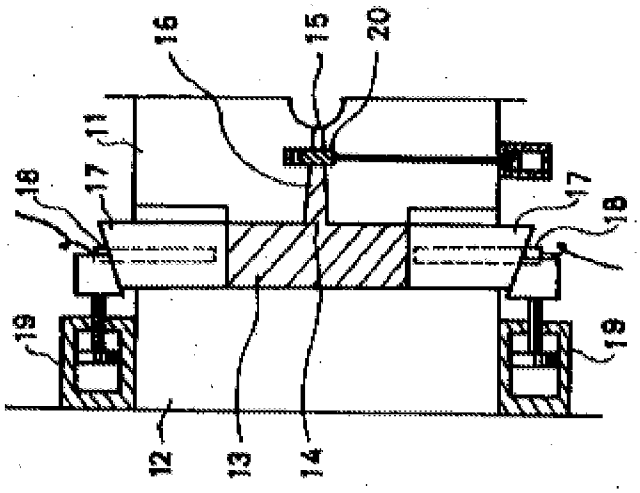
exterior sidewalls in the face contour of the mold cavity. (See lines 32-39, column 6 and figure 5) Also as shown, in an open position of the apparatus, the wall parts, together, provide a space volume which is greater than the volume of the wall parts in the closed position. (See figure 6 and lines 38-45, column 7)

Therefore, **as to claim 1**, Lovejoy et al ('740) disclose a mold apparatus comprising two mold parts (50 and 60), movable relative to each other in a first direction of movement; also the mold apparatus include a mold cavity in which the mold cavity being provided on both mold parts (50 and 60), and also four slide-able rigid wall parts movable in a second direction movement which are moveable between a first retracted position and a second expanded position while the mold cavity with the wall parts in the second position are in a product forming position and wall parts in the first position have a volume greater than with the wall parts in the second position while the first and the second direction of movement mutually include an angle.

However, Lovejoy et al ('740) **fail to teach** the slid-able wall part also is movable within the mold cavity in a closed mold position, as claimed in **claim 1**.

In the analogous art, Kumazaki (JP '330) teach a movable metal mold comprising a stationary mold (11), a movable mold (12) by way of a gate (15) and a spool (16) with a pouring port (14) in which the stationary mold in which the stationary mold (11) and the movable mold (12) associating with two

movable slide members (17) form a mold cavity (13), in such a way, that the two pressure mechanisms (19) cause a movement of the slide members (17) and further, the movement of the slide members (17) presses the plastic according to the volume contraction and thereby making the formed product without blow holes and shrinkage holes. (See abstract and figure 1)



Thus, Kumazaki (JP '330) teaches the slid-able wall parts (17) are movable in a direction of movement within the mold cavity with the mold cavity in a closed position.

Further, Kumazaki (JP '330) teach the advancement of the slide member inside of the mold cavity suppress formation of the foam and sinking. (See abstract)

Therefore, **it would have been obvious** for one of ordinary skill in the art at the time of applicant's invention to modify the mold apparatus as taught by the disclosure of Lovejoy et al ('740) through **providing** a movement of the slid-

able wall parts within the mold cavity in a closed mold position **in order to** improve the quality of the obtained product since the advancement of the slide member into the mold cavity suppress formation of the foam and sinking in the manufactured product, as suggested by Kumazaki (JP '330).

Furthermore, as to **claims 2- 3 and 5,** Lovejoy et al ('740) teach a first direction of movement in which the two mold parts (50 and 60) move toward and away from each other and a second direction of movement in which the slide-able walls (80, 82, 84, and 86)extend or retract from each other wherein the first and the second directions of movement include an angle of 90 and therefore, the first and the second direction of movement provide a right angle.

Moreover, Lovejoy et al ('740) teach the movement of the sidewall members between in an extended or retracted positions are affected by means of mechanical linkages coupled between the respective sidewall elements. The linkage elements (102) and (104) each have one end pivotally connected to the ejection plate (100) and their opposite ends pivotally connected to the sidewall members (80) and (82), respectively. (See lines 18-25, column 5) furthermore, the prior art teaches the sidewall members (84 and 86) are pivotally connected by respective linkages (110 and 112) to the ejection plate (100) in the same manner as the sidewall members (80 and 82). (See lines 48-53, column 5)

Therefore, as to **claim 4**, Lovejoy et al ('740) disclose four separate and independently moveable wall parts, which are provided in the mold cavity, move independently of each other by linkages (110 and 112).

Furthermore, the prior art teaches a core section (70) in which cooperates with the cavity of molding section (50) and the slide-able walls (80, 82, 84, and 86)to form the mold cavity. (See lines 16-22, column 4) therefore, as to **claim 6**, prior art teaches a core part of the mold cavity is surrounded from four sides by four movable wall parts.

Moreover, as to **claim 10**, Lovejoy et al ('740) teach the cavity in the mold part (50) include a bottom wall part having three inlet gates (46-48) as injection openings. (See lines 21-26, column 3)

Furthermore, Lovejoy et al ('740) disclose control mechanism for actuation of the movable core elements and sidewall mold components is a hydraulic cylinder (106) which is positioned rearward of the second mold section (60). Further, to accommodate the movement of this control mechanism, a spacer structure is provided between the platen (32) and the backside of the second mold means (60). (See lines 23-30, column 4 and lines 32-47, column 5) Therefore, as to **claim 11**, the prior art teaches drive means are provided for each movable wall part.

Also, as to **claim 12**, the prior art teaches a horizontal hydraulic molding (31) as a pressing device wherein the first direction of movement is parallel to the pressing direction of the pressing device. (See lines 43-61, column 2)

New Grounds of Rejection

35 USC § 112, First Paragraph

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 20 is rejected under 35 U.S.C. **112, first paragraph,** as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 20 recites “the central first core part, the second core part, and the moveable wall part define substantially parallel mold cavities there-between" in which however the specification indicates "this respective moveable wall part has a direction of movement approximately parallel to the first direction of movement” (see paragraph [0018]), no disclosure in the application indicates that the claimed subject matter of claim 20. Therefore, the claim fails to comply with the written description requirement and the recitation is treated as the “**new matter**”.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

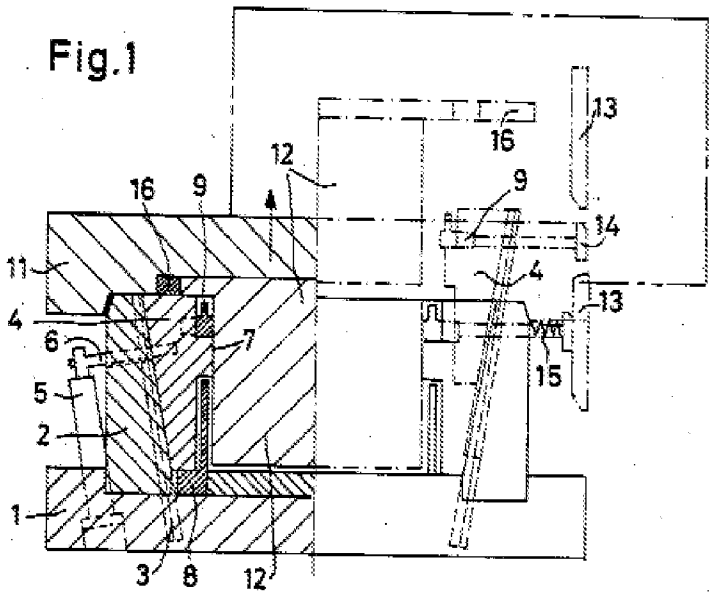
The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1- 9, 11- 13 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Theysohn et al. (US 4,025,022) in view of Kumazaki (JP 57-115330)

Theysohn et al. (US '022) teach a die mold for the manufacturing of the crate-like double walled containers comprising a base plate (1), supporting flanges (2) , movable lateral wedges (4), guides (3) which are situated at a sharp angle to the vertical and the contact surfaces of the lateral wedges (4) and having a corresponding inclination, hydraulic cylinder (5) for moving lateral wedges (4) which are arranged parallel to slanting guide (3) and is coupled by means of connecting bolt (6) to inner lateral wedge (4). Each of the lateral wedges (4) is provided with a projection (7) extending into the mold cavity which serves to create a recess in the respective lateral wall of the container.

Further, four base central cores (8) are extended from the base plate (1) between the corners of the mold cavity. (See column 2, lines 19- 46)



Theysohn et al. (US '022) also teach the apparatus include another mold part (11) including a top base plate (11) and massive inner core (12) secured thereto which extend into the hollow area defined by lateral wedges (4). Core (12) has projections on its under side as well as grooves which are in connection with a corresponding profiling of the bottom base plate (1) which form an interrupted structure in the crate bottom or base. (See column 2, lines 47- 59)

Further, according to Theysohn et al. (US '022), when the mold is closed, sliders (9) are pressed by a cam (13) through compression plate (14) on slider (9) against the urging of the spring (15) in an inwardly direction. During the mold opening procedure, however, cam (13) passes compression plate (14)

simultaneously with the motion of inner core (12). The length of the cam (13) is dimensioned so that following the backward motion of the sliders (9) away from compression plate (14) and thus releases slider (9) for movement in the outward direction. This movement is caused by the force of spring (15). (See column 4, lines 31- 42)

Further, when the mold is closed, the slider (9) is positioned within the mold cavity. Cam (13) bears against the compression plate (14) and is coupled to inner core (12) and slider (9) is brought into position by means of compression plate (14). In opening the mold, inner core (12) is pulled out and cam (13) simultaneously moves upwardly. Slider (9) moves along line (19) while it is still in the molded container.

Theysohn et al. (US '022) disclose when the mold is closed, the slider (9) is positioned within the mold cavity. Cam (13) bears against compression plate (14) and is coupled to the inner core (12) and the slider (9) which is brought into position by means of compression plate (14). In opening the mold, the inner core (12) is pulled out and cam (13) moves upwardly. The slider (9), on the other hand, moves along line (19) while still in the molded container. (See column 5, lines 9- 17)

Therefore, as to **claim 1,** Theysohn et al. (US '022) teach a mold for manufacturing crates comprising at east two mold parts (1 and 11) moveable relative to each other in a first direction of the movement in which the two mold parts in the closed position form a mold cavity and the mold cavity provide on

four sides with a slidable wall part (4) moveable in a second direction of the movement within the mold cavity and the slide-able wall part (4) is also movable between a first, retracted position and a second position which moves forward while the mold cavity with the wall part (4) in the second position is in a product forming position and the wall part (4) in the first position has a volume greater than with the wall part in the second position.

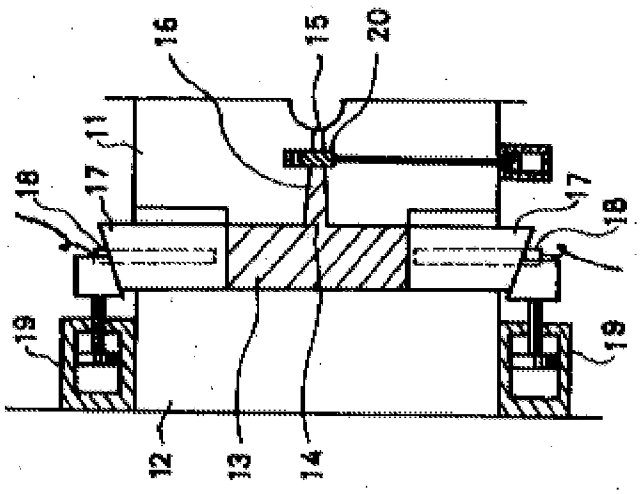
Further, as to **claim 7**, Theysohn et al. (US '022) teach a first mold part (11) including a central first core part (12), a second mold part (1) movable with respect to the first mold part in a first direction of movement in which the second mold part includes a second core part (8) disposed at a distance from the central first core part (12) when the mold is in a closed position, and the second core part (8) have a first side and a second side which is opposite to the first side, in such a way that the first side has a face toward the central core part (12), and the second side has a face away from the central first core part, and at least one wall part (4) moves toward the central first core part (12) in a second direction of the movement between a retracted position as a first position and an extended position as a second position wherein the second direction of the movement being substantially perpendicular to the first direction of movement; further, the central first core part (12), the second core part (8), and the moveable wall part (4) define a mold cavity in which the mold cavity having a product forming volume that when the movable wall (4) is in the extended position has a greater volume than when the moveable wall part is in

the retracted position. Furthermore, the central first core part (12) and the movable wall part (4) are disposed on the opposite first and second sides of the second core part (8) such that the movable wall part (4) faces the second side of the second core part (8) and facing away from the central first core part (12); also, the second direction of the movement for the respective wall part (4) is directed towards the second core part (8) while the mold cavity is designed such that when the moveable wall part (8) is in the retracted position, a flow path for plastic is defined between the central core part (12) and the second core part (8) and the moveable wall part (4).

However, Theysohn et al. (US '022) **fail to teach** the slid-able wall part also is movable within the mold cavity in a closed mold position, as claimed in **claim 1**. Also, Theysohn et al (US '022) **fail to teach** the moveable wall part is capable to move toward the central first core part in the closed position, as claimed in **claim 7.**

In the analogous art, Kumazaki (JP '330) teach a movable metal mold comprising a stationary mold (11), a movable mold (12) by way of a gate (15) and a spool (16) with a pouring port (14) in which the stationary mold in which the stationary mold (11) and the movable mold (12) associating with two movable slide members (17) form a mold cavity (13), in such a way, that the two pressure mechanisms (19) cause a movement of the slide members (17) and further, the movement of the slide members (17) presses the plastic

according to the volume contraction and thereby making the formed product without blow holes and shrinkage holes. (See abstract and figure 1)



Thus, Kumazaki (JP '330) teaches the slid-able wall parts (17) are movable in a direction of movement within the mold cavity with the mold cavity in a closed position, and also the wall parts (17) are capable to move toward the center portion of the mold cavities.

Further, Kumazaki (JP '330) teach the advancement of the slide member inside of the mold cavity suppress formation of the foam and sinking. (See abstract)

Therefore, **it would have been obvious** for one of ordinary skill in the art at the time of applicant's invention to modify the mold apparatus as taught by the disclosure of Theysohn et al (US '022) through **providing** a movement of the slid-able wall parts within the mold cavity in a closed mold position in a way that the wall parts are able to move towards the central first core part **in**

order to improve the quality of the obtained product since the advancement of the slide member into the mold cavity suppress formation of foam and sinking, as suggested by Kumazaki (JP '330).

Furthermore, as to **claims 2- 3 and 5,** Theysohn et al (US '022) teach a first direction of movement in which the two mold parts (1 and 11) move toward and away from each other and a second direction of movement in which the slide-able walls (4) extend or retract from each other wherein the first and the second directions of the movement include an angle of 90° and therefore, the first and the second direction of movement, provide a right angle.

Further, Theysohn et al (US '022) disclose four lateral wedges which are movable upwardly and downwardly at a sharp angle to the vertical during opening and closing of the mold. (See column 6, lines 1- 3) Therefore, as to **claim 4**, Lovejoy et al ('740) disclose four separate and independently moveable wall parts, which are provided in the mold cavity, move independently of each other by linkages, and further, as to **claim 6**, at four sides of the core part (12), a moveable wall part (4) is provided.

Also, Theysohn et al (US '022) teach the mold cavity is designed for forming a holder and having a bottom surface (1) and a longitudinal wall (8) extending away from the bottom surface (1) in which the bottom surface (1) and the longitudinal wall (8) include a thickness which is smaller than the height of longitudinal wall (8), and the bottom wall (8) is positioned at right angle in respect to the bottom surface, while the height of the longitudinal wall (8) is

greater than the dimension of the bottom surface, as claimed in **claim 8**. (See column 3, lines 19- 59; figure 1)

Further, Theysohn et al (US '022) teach at least one longitudinal wall forming part of the mold is arranged for forming a cavity in the longitudinal wall (8) while a moveable wall part (4) is designed for forming at least one wall of the cavity (see figure 1), as claimed in **claim 9**.

Further, Theysohn et al (US '022) teach lateral wedges (4) are driven by means of hydraulic motor means (5) which are arranged substantially parallel to slanting guide (3) and are coupled by means of connecting bolt (6) to inner lateral wedge (4). (See column 3, lines 31- 34) Further, as to **claim 11**, Theysohn et al (US '022) teach for each movable wall part (4), a movable wall part drive mean (5) is provided.

Theysohn et al (US '022) also teach when the mold is closed, sliders (9) are pressed by a cam (13) through compression plate (14) on slider (9) against the urging of spring (15) in an inwardly direction. During the mold opening procedure, however, cam (13) passes compression plate (14) with the motion of the inner core (12). (See column 4, lines 31- 36) As to **claim 12**, Theysohn et al (US '022) teach a horizontal hydraulic molding (5), as a pressing device, wherein the first direction of movement is parallel to the pressing direction of the pressing device. Further, as to **claim 13**, each moveable wall part (4) is moveable independently of the pressing device.

Further, as to **claim 20**, the central first core part (12), the second core part (8), and the movable wall part (4) define a mold cavity.

Response to Arguments

Applicant's **arguments** with respect to claims 1- 13 and 20 have been considered but are **moot** in view of the new ground(s) of rejection.

Applicant's **arguments** filed on 12/21/2009 have been fully considered but they are **not persuasive**.

In response to **applicant's arguments** that the reason for combining Lovejoy et al (US 3,905,740) and Kumazaki (JP 57- 115,330) rejection does not establish a proper combination rejection for rejecting the claims [see remarks; page 7, lines 1- 12], applicant's arguments were fully considered but were **not found persuasive** because applicant's attention is drawn to the point that, as it has been recited in the above rejection, Kumazaki (JP 57- 115,330) clearly teaches "the slide member may be advanced in the cavity in response to the constriction in volume of plastics to prevent foam and sinking. The molding cycle may be shortened because the metal mould is maintained at a low temperature." (See the English abstract) Therefore, the prior art of Kumazaki (JP '330) clearly teach the advantages of moving the slide members in the mold cavity when the mold is in a closed position, and therefore, there is a strong motivation for combining the teachings of Lovejoy et al (US 3,905,740) with the teachings of Kumazaki (JP '330) to reject the claims 1- 6 and 10- 12.

Further, applicant **argues** that "the Lovejoy patent only discloses a mold, wherein it is essential that the mold parts are stationary during the process for forming undercuts. As set forth in the column 6 of the Lovejoy patent, once injection of the thermoplastic material has been completed and the molded article has solidified, the piston 40 of the hydraulic control apparatus 41 is retracted to open the mold. Therefore, a person of ordinary skill in the art would not think of applying wall movement to the mold disclosed in the Lovejoy patent after the mold is closed when following the teachings of Lovejoy." (See remarks; page 7, lines 14- 20)

This is **not found persuasive** because there is no disclosure in Lovejoy that shows the mold parts are essentially stationary during the procedure of using the apparatus and further the cited teaching of the reference does not provide a base to show that the mold parts have to be stationary during the molding process. Furthermore, applicant's attention is drawn to the point that Lovejoy has not been used alone, but it is a combination rejection; however, Lovejoy is silent about movement of the mold parts, Kumazaki (JP 57- 115,330) teaches the mold members slide when the mold is in a closed position.

Moreover, applicant **argues** that "the Kumazaki (JP 57- 115,330) patent relates to the forming of thick products, and contrary to the teachings of the Lovejoy patent. There is simply no way to technically combine the molds disclosed in the Lovejoy and Kumazaki (JP 57- 115,330) patents." (See page 7, lines 20- 24)

Applicant's **arguments** were fully considered but **were not found persuasive**. Applicant's attention is drawn to the point that the claimed invention is an apparatus and in the procedure of patent examining a claimed apparatus, the patentable weight is only given to the claimed structure and no patentable weight is given to the product obtained by the apparatus or the process of using the claimed apparatus. Therefore, thickness of the manufactured product does not give further patentable weight to the apparatus and the argument **is not persuasive**.

Since the rejection of the claims over the McDonald (US 3,433,292) has been withdrawn in the above rejection, the applicant's arguments have been considered but are moot in view of the new grounds of the rejection

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on

the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seyed Masoud Malekzadeh whose telephone number is 571-272-6215. The examiner can normally be reached on Monday – Friday at 8:30 am – 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven P. Griffin, can be reached on (571) 272-1189. The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published application may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance form a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Seyed M. Malekzadeh/

Examiner, Art Unit 1791

/Steven P. Griffin/

Supervisory Patent Examiner, Art Unit 1791